

2nd Virtual (Online) Conference of Pan African Paediatric Surgical Association (PAPSA) 26 – 27 November 2021

ABSTRACTS OF SCIENTIFIC PRESENTATIONS

Oral Presentations:

01 A Low-Cost Stoma Simulator

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Background: Stoma formation is a common neonatal procedure. Traditional surgical training has been based on the deliberate practice on patients. We describe a novel low-cost model for stoma simulation.

Methods: A Tupperware box forms the base of the model. The lid is removed. Inside the box we place a loop of porcine intestine, about 20cm in length. Small or large bowel works. A rectangular sheet of porcine skin is cut to the size of the open container. The skin is secured on the sides with thin rope, producing a drum-like effect. The advantages of the porcine skin is that it's similar to human skin, and the hypodermis replicates the sheath (especially if the skin is placed in a fridge overnight), to anchor the stoma. The model is conducive to performing a variety of stomas.

Results: This model was used in a national training day for paediatric surgical registrars. All 18 trainees were satisfied with the use of the model. It was rated it as useful (95%) and life-like (85%). The content validity of the model was rated highly.

In the future, we hope to assess the use of this model as an objective structured assessment of technical skills (OSATS).

Conclusion: In paediatric surgery, most simulation based models are expensive. We hereby describe a novel, low- cost and easily reproducible simulator for stoma formation.

02 Trainees Satisfaction with Paediatric Surgery Online Sessions During Covid-19 Period

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Background/ Purpose: During the time of Covid-19 pandemic it was difficult to run face to face academic sessions, so online teaching was the safest and easiest way to deliver the planned academic program. These sessions are presented on weekly basis by the trainees and attended by trainers in Sudan and abroad.

Methods: Total number of delivered sessions was 70. The platform used for delivering these sessions was Jitsi Meet. Data was collected and analyzed using Google forms.

Results: total number of responders was 34 out of 53. 35.3% are attending the sessions always, 35.3% are attending sometimes and 29.4% are attending rarely. Regarding the presented material, 29.4% thought it was excellent, 55.9% of the trainees thought it was very good, 11.8% thought it was fair, and only one candidate thought it was poor (2.9%). The level of discussion was rated as excellent by 41.2%, very good by 47.1%, and fair by 11.8%. 94.1% of trainees thought the sessions were attractive. 97.1% of the trainees thought that the sessions were helpful in improving their presentation skills. And the same percentage (97.1%) found the sessions motivating for them to study.

Conclusion: online sessions are the safest way to deliver academic activities in the time of Covid-19 pandemic, yet we need to refine the session's topics to suit trainee's needs along with more trainers involvement.

03 Prospective Study of Laparoscopic Management of Appendicitis During The COVID Pandemic in A Single Paediatric Centre; Comparison to Historic Cohort

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Aim: The COVID pandemic affected the presentation of many conditions. This study analyses and describes the impact of COVID pandemic on management of appendicitis in children and the role of laparoscopy.

Methodology: We performed a prospective (during the pandemic) and retrospective (historic control) review of management and complications of appendicitis in a tertiary paediatric surgical unit. Preoperative data, operative findings and patient outcome measures were compared between groups to identify and differences between the study periods and to identify any factors predictive of outcome measures.

Results: 62 patients were identified in the pre-pandemic cohort, 71 in the pandemic cohort. There was no significant difference in patient demographics, length of admission or time between admission and surgery between both groups. There was however a significantly longer time between diagnosis and surgery, and presentation to hospital in the pandemic group. Clinical outcomes were comparable between the two groups, with no difference in presence of surgical complications or advanced appendicitis between the two groups. Laparoscopic surgery was safely used to manage appendicitis in the pandemic cohort through utilization of a COVID pathway that included guidance on testing, and use of PPE. Conservative

management in the pandemic cohort was reserved for patients with appendicitis with presence of mass formation.

Conclusion: Despite a delayed presentation and a slightly longer delay between admission and surgical management, there was no rise in the incidence of advanced appendicitis, complications of surgery or length of stay during COVID-19 pandemic. Laparoscopic appendicectomy was also shown to be a safe and effective standard for management of appendicitis during the pandemic.

04 The Use of NARCO-SS Score in Predicting Adverse Events in Children Undergoing Major Elective Abdominal Surgery at The University Teaching Hospital, Lusaka, Zambia

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Aim: To determine the reliability of NARCO-SS in predicting perioperative adverse events and to determine risk factors for perioperative adverse events in patients undergoing abdominal surgery.

Methodology: A prospective cohort study, from December, 2019 to December, 2020. Patients scheduled for abdominal surgery were scored pre-operatively and end points were; when an adverse event occurred or up to 30 days. Analysis of the reliability of the tool, bivariate and multivariate logistics regression were done.

Results: 119 patients were enrolled and 49% of them had adverse events. Both bivariate and multivariate analyses showed no significant association between the NARCO-SS score and the occurrence of adverse events and escalation of care. The area under the ROC curve (AUC) of the NARCO-SS for adverse events was 0.518, there was a significant correlation between high scores and mortality (P=0.001). Longer duration of surgery and complex surgery were risk factors for adverse events.

Conclusion: The NARCO-SS score was found to be a poor predictor of adverse events with a fair inter-rater reliability as a scoring tool. A longer duration of surgery and complex surgery were found to be risk factors.

05 Pragmatic Multicentre Factorial Randomised Controlled Trial Testing Measures to Reduce Surgical Site Infection in Low- and Middle-Income Countries (FALCON)

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Aim: Surgical site infection (SSI) represents a major burden for patients, doctors, and health systems across all settings. SSI is the commonest postoperative complication worldwide and the commonest healthcare-associated infection in low- and middle-income countries (LMICs). We aimed to assess whether either (1) 2% alcoholic chlorhexidine versus 10% povidone-iodine for skin preparation, or (2) triclosan-coated suture versus non-coated suture for fascial closure, can reduce SSI at 30-days post-surgery for each of clean-contaminated and contaminated/dirty surgery.

Methodology: Pragmatic, patient and outcome assessor blinded, 2x2 factorial, stratified, multicentre randomised controlled trial. Adults and children undergoing emergency or elective surgery with abdominal incision of at least ≥ 5 cm through open or laparoscopic surgery were eligible.

Results: 5788 patients were recruited from 54 hospitals in 7 LMICs countries. 3091 and 2697 were clean-contaminated and contaminated/dirty wounds respectively. 84% adults and 16% children. 51% emergency and 49% elective cases. There was 22% overall SSI with 15.5% and 30.0% among Clean-contaminated and contaminated/dirty respectively. There was no statistically significant difference between choice of skin preparation or fascial closure materials for the 30 re-operation or mortality among the patients.

Conclusion: High SSI rates still predominate even in this High quality, pragmatic, well reported trial. No evidence supporting 2% alcoholic chlorhexidine or triclosan sutures. This calls for change in global guidance on SSI.

06 Impact Evaluation of a Paediatric Operating Theatre Installation in National Hospital, Abuja, Nigeria

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Aim: As part of the mission to strengthen paediatric surgical infrastructure in low-middle income countries (LMICs), the KidsOR organization installed two dedicated paediatric operating theatres in August 2019 within the National Hospital Abuja in Nigeria. This study sought to characterize the clinical and economic impact of surgical delivery to children at this hospital.

Methodology: Clinical data were collected from July 2018 to September 2021, and cases before and after the installation of the paediatric operating theatres were compared. Changes in surgical volume pre- and post-installation were assessed using interrupted time series analysis (ITSA). April-June of 2020 were omitted reflecting the COVID-19 lockdown to minimize aberrancy. A cost-effectiveness analysis (CEA) model was used to evaluate the economic impact of the paediatric operating theatre over a year. Health outcomes, measured in lives saved and disability adjusted life years (DALYs) averted, were informed by the paediatric surgical patient database and prior literature. Costs included donated operating theatre installation and reusable equipment, perioperative personnel salaries, procedural medication, disposable equipment and inpatient hospital costs to provide a healthcare system perspective. The primary outcome was the operating theatre's incremental cost-effectiveness ratio (ICER). Currency conversion utilized purchasing price parity, and costs are reported in United States dollars (\$) inflated to 2021 using consumer price index.

Results: 1,068 paediatric surgical cases were performed in the span of 3.2 years. Surgical volume increased significantly by 13 cases immediately following installation, followed by a significant increase in 0.18 cases/month post-installation. There was also a significant increase in surgical volume for elective cases post-installation. In-hospital post-surgical mortality rate did not change significantly in the pre- and post-installation trends, averaging 0.7 cases per month. Annually, the paediatric operating theatre averted 1,065 DALYs and cost \$145,631. From the charity perspective, which included only

installation and reusable equipment costs, the operating theatre ICER was \$82 per DALY averted or \$4,448 per healthy life saved. From the healthcare system perspective, the ICER was \$137 per DALY averted or \$7,384 per healthy life saved. Both ICERs were cost-effective and well below the country's ½ GDP per capita threshold (\$1,185), and were similar to other cost-effective surgical and medical public health interventions.

07 A Study of Pediatric Trauma in Africa

Abdelbasit E Ali, Adesoji Ademuyiwa, Kokila Lakhoo, John Kefas, Espehoumenou, M Murphy, Caldorico, A Leopold, Rouma Bankole, Seraphin Gbenou

PAPSA Trauma Working Group

Aim: Trauma remains a leading cause of morbidity and mortality in children across the world, and particularly so in LMICs including Africa. Accordingly, there is a need to have adequate registry of the scale of the problem and to define the limiting factors of provision of the necessary services required to reduce the potential mortality and disability. In this regards, and following a panel discussion on Paediatric Trauma in Africa at the 12th PAPSA meeting in Addis Ababa, Nov 2018, a consensus was reached on the need for a trauma registry establishment to obtain a uniform database. A preliminary survey was launched and here below, we present the results of this study.

Methodology: Data collection form was designed and sent out through PAPSA communication platform to all its registered membership. Data collection form requested provision of prospective data on all paediatric major trauma admitted to or seen at participants' health facilities between the beginning of April 2019 and the end of June 2020. Data requested include: hospital location, city, country, child's age, gender, type of injury, mechanism of injury, severity, initial management received, method of transport, time to arrive to hospital, availability of surgical specialties, length of hospital stay and injury outcome.

Results: There were 531 entries from 6 countries in the African continent and contribution from one center in UK for comparison. Response to the survey was variable ranging from 1 (in Madagascar) to 383 in (Benin). Injured children ages ranged between one day and 18 years with a mean age 3.53 years and median age 1.34 years. Males were more frequently injured than females (62 vs 38%). The leading causes for injuries were falls 194 (36.53%) and RTA 176 (33.15%), followed by obstetrical (7.9%), thermal (5.1%) and domestic injuries (4.1%), and others (13.22%). Firearm injuries were reported in 4 cases, all of whom were from a UK center.

The commonest trauma encountered was limb fractures (34.1%), followed by traumatic brain injury (20.9%), burns (10.4%), multiple injuries (9.2%), abdominal injuries (6.2%), chest injuries (4.1%) and others (15%). Regarding the method of transport, public and private transport were used in almost 60% of cases to reach to healthcare facilities while ambulance service was used in 11% of cases. Distance to a health facility varied between 1-157 Km, with a mean of 36.12Km and a median of 19Km, and time taken from injury to arrive at a health facility was ranging between 2 minutes and 210 days (mean 6.5 days and median 6 hours). Initial management varied from None (70.2%), analgesia administration (4.5%), ambu bag respiration (1.7%), chin lift-jaw thrust (0.6%) and IVF (0.4%). In-Hospital initial management with IVF was carried out in 71%, nasal Oxygen 16.4%, Blood tx 7.7%, analgesia 12%. Definitive treatment 95.5%, Length of Hospital Stay (LOHS) 0 – 165 days. Outcome was full recovery in 90.6%, morbidity and a disability in 8.1% and mortality was encountered in

1.3% in this study. There was shortage in subspecialty facilities in many hospitals, this has been especially reported in districts.

Conclusion: There was a disproportionate response to the questionnaire. The spectrum of paediatric trauma varies significantly, with different injury mechanisms and patterns. The two main causes of trauma in children in this study were the falls from height and road traffic accidents. Limb fractures and TBIs were the commonest types of sustained injuries in children. Long distances to travel to reach healthcare facilities was noticeable in this study, together with substantial lack of adequate ambulance facilities and shortage in necessary subspecialty services such as that of neurosurgical and orthopedic services including rehabilitation.

08 A Structured Systematic Review of the Burden of Electrical Burns in Children in South Africa

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Aim: The global burden of paediatric electrical burns is estimated to be 2-4% of all paediatric burns. 20.8% of South Africans live in informal settlements with limited access to safe electricity. The aim of this study is to estimate the burden of paediatric electrical burns in South Africa. Through a structured systematic review of published literature, we aim to demonstrate the need for further studies and guide public health interventions.

Methodology: A PubMed search with the MESH Terms “electrical burns”, “children” and “South Africa” did not retrieve any papers. The MESH Terms “burns”, “children” and “South Africa” retrieved 76 PubMed papers. 3 additional papers were retrieved using Google Scholar. These were screened to assess for data on paediatric electrical burns.

Results: 79 studies fitting the search criteria were identified. After screening, 34 full-text articles were assessed for eligibility. Of these, 9 provided data on paediatric electrical burns. All studies included were retrospective, cross-sectional studies published from 2010. They describe the proportion of paediatric electrical burns from 1995 to 2016. In total, 20157 paediatric burns patients were included, 3.38% (n=682) were electrical burns patients. Electrical burns as a proportion of total paediatric burns varied from 1.8% to 7%. Figure 1.1 reflects the studies reviewed in chronological order.

Conclusion: There is limited published data and apparent delays to publications pertaining to paediatric electrical burns in South Africa. This is relevant given the impetus to move away from gas and open-flame appliances towards electricity as a safer source of energy. However, lack of access to affordable electricity has resulted in improvised electrification in informal settlements. There appears to be a rise over time in electrical burns as a proportion of total paediatric burns seen.

09 Wilms Tumor in Low- and Middle-Income Countries: Current Practices and Priorities

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Baylor College of Medicine Michael E. DeBakey Department of Surgery, USA

Aim: Abstract To identify the current practices and priorities in Wilms tumor management for surgeons in low- and middle-income countries (LMICs).

Methodology: One hundred thirty-seven pediatric surgeons from 44 countries completed surveys requesting Wilms tumor surgical strategy in LMIC. This survey was distributed through the Global Initiative for Children's Surgery, Pan-African Pediatric Surgical Association, and Latin American Pediatric Surgical Oncology Group.

Results: Ninety-two respondents (67%) participated from 19 lower middle-income countries (43%). Twenty-one respondents (15%) participated from 9 lower income countries (21%). Nineteen respondents (14%) participated from 13 upper middle-income countries (30%). Most providers do not obtain biopsy for suspected Wilms tumor (79%). Delayed resection after preoperative chemotherapy is the preferred approach (70%), which providers chose due to protocol (45%), to decrease tumor rupture (22%), and to decrease complications (8%). The providers' goal is to prevent tumor spillage and upstaging (46%) or to prevent bleeding, complication or other organ resection (21%). Most surgeons believe that upfront resection increases the risk of tumor spillage (72%).

Conclusion: Providers in LMICs prefer delayed resection after preoperative chemotherapy to reduce the incidence of tumor spillage and upstaging of Wilms tumor. An evidence-based guideline tailored to the LMIC context may be developed from these findings.

010 Intraoperative Staging of Wilms Tumor in Pediatric Surgery Department in Sudan

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Aim: Objective: To evaluate intraoperative staging of Wilms tumor in Sudan from 2017 to 2020.

Methodology: Methods: Cross sectional, hospital-based study, conducted in five pediatric surgery centers in Sudan. During the period of 1st of August 2020-1st of Feb 2021, 60 children age of 1 month to 15 years who present with palpable abdominal mass were included. Data was collected using data collection form, then analyzed using SPSS (vs25) software program.

Results: Results: the most frequent age of presentation being in the extremities of age, 34(56.7%) were within age group 6months-5 years, 30(59%) were male. most of them originally came from rural area. Preoperative imaging result documentation is limited. Intraoperative finding documentation and operative staging is deficient. Most of operator 76.7% didn't comment about intra- operative tumor spillage. Most of operator 51(85%) didn't mentioned peritoneal metastasis in their operative notes. In 34(56.7%) of cases lymph node were sampled and 3(5%) were not, Peritoneal metastasis was reported in 3(5%) of patients, and 6(10%) did not have peritoneal metastasis, while not mentioned in 51(86%) of patients. According to postoperative histopathology, positive marginal status of tumor found in 7(11.7%), capsular breach was in 7(11.7%) of patients, and in 3(5%) of patients was not mentioned. Out of patients 45(75%) were documented discussion with oncologist.

Conclusion: Conclusion: The documentation of preoperative imaging is limited as well as intraoperative finding details of tumor resection in form of Operative Staging which directly influence postoperative chemotherapy regimen.

011 Factors Associated with Treatment Outcomes of Children Post Nephrectomy for Nephroblastoma at The University Teaching Hospitals in Lusaka, Zambia

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University of Zambia

Aim: Nephroblastoma is the commonest primary malignant renal tumour of childhood. Survival rates in high-income countries are approximately 90%. However, low-income countries have low survival rates of 20% to 50%. This study assessed factors associated with treatment outcomes of children post nephrectomy for nephroblastoma at the University Teaching Hospitals in Lusaka, Zambia

Methodology: A retrospective observational cohort study was conducted where all children diagnosed with unilateral Wilms tumour below the age of 16 years who had nephrectomy from July 2016 to June 2019 were enrolled. Sociodemographic, clinical characteristics and treatment outcomes were noted and analysed using STATA version

Results: 30 patients were enrolled. The male to female ratio was 1:1. The one-year event-free survival was 46.7%. Treatment abandonment accounted for 36.6% of the participants. 16.7% of the patients had disease progression. No patient had a relapse or died during the one-year follow-up period. 66.7% had advanced disease stage III and IV. Advancement in age (above 4.3 years), living in a rural environment more than 100 Kilometers away from Lusaka, and advanced disease stage were all associated with a poor outcome.

Conclusion: Factors associated with poor outcomes in this study were advanced age and late presentation.

012 An Unusual Cause of Complex Enteroenteric Fistulae in Children: A Warning Letter to The Parents Number 11

Prof Gamal Al-Saied

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Aim: To raise awareness of parents and general practitioners about the danger of High-strength Neodymium Magnetic Beads Ingestion by children either multiple magnets or single magnet with other metallic foreign bodies simultaneously or shortly after each other.

Methodology: Patients and methods: Five children (3boys and 2girls) have swallowed multiple high-strength and powerful rare earth element Neodymium magnets. Their ages ranged between (nine months to six-year-old). Three cases were subjected to open and two for laparoscopic exploration (one of them converted to open).

Results: Results: multiple complicated enteroenteric fistulae in three cases and multiple perforations of the small intestine in two cases. Resection anastomosis was done for one case and simple closure of small bowel perforations for the other four cases. Post operative course was uneventful for all patients and discharged in a good general condition.

Conclusion: Conclusion: General practitioners should be aware of the danger and complications of Neodymium magnetic beads ingestion by children. Early endoscopic removal is recommended if

the patient presents immediately after ingestion. Parents awareness through media is required to abandon magnet balls in houses and where children can ingest those dangerous balls.

013 Anatomical Derangements after Failed PSARP: Correlating MRI and Operative Findings

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Aim: to study anatomical derangements following previously complicated PSARP procedure, in addition to the effect of reoperation on rectifying this distorted anatomy.

Methodology: The study included 27 boys who were re-operated after a previous complicated PSARP. Included cases were divided into two groups: Group A (14 cases) were referred before colostomy closure with an obviously complicated primary operation; and Group B (13 cases) were referred with delayed complications after colostomy closure.

Pelvic MRI examinations were performed before reoperation in 19 cases. In nine of these cases, a repeat MRI examination was performed at follow up after reoperation to study the effect of redo surgery on rectifying the distorted anatomy.

Results: Abnormal wide anorectal angle and wide pelvic hiatus were common anatomical derangements after a previously complicated PSARP. An important goal of reoperation was reconstruction of the levator ani behind the anorectum trying to create a more acute anorectal angle and a narrower pelvic hiatus. The success of this corrective step was evaluated by MRI comparing pre- and post-operative measurements that showed a favorable decrease in the values of anorectal angle and hiatal/PC ratio. Improvement of faecal continence was documented after reoperation in 8 out of 10 cases in group B.

Conclusion: A wide pelvic hiatus was a frequently encountered postsurgical complication after failed PSARP that has most probably resulted from poor reconstruction of the pelvic floor at time of the primary repair. Reapproximation of the split halves of levator ani in the midline behind the anorectum at reoperation can help to correct the distorted internal anatomy and improve bowel control in these cases.

014 Risks and Benefits of Central Line Choice in Gastroschisis in a Resource-Constrained Setting

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Aim: To evaluate parenteral nutrition requirements and central-line associated outcomes in patients with gastroschisis in a state-funded hospital in South Africa to provide local evidence base for choice of central line type (peripherally inserted central catheters, PICC; central venous catheters, CVC or tunnelled surgically inserted Broviac ® catheters).

Methodology: Retrospective audit of central venous catheter outcomes and predictors of parenteral nutrition duration for patients with gastroschisis managed at a tertiary free-standing paediatric

hospital in a middle-income country over a 10-year period from 2010-2019

Results: 56 patients received a total of 168 central lines (mean 3 per patient), including 41 peripherally inserted central catheters (PICC), 69 push-in central-venous catheters (CVC) and 58 tunnelled Broviac catheters. Mean catheter duration was 8 days for PICC, 9 days for CVC and 25 days for Broviac, with only 56% removed electively. Proven central line-associated blood stream infection (CLABSI) occurred in 15 per 1000 line days for PICC and CVC compared to 5 per 1000 for Broviac lines. Mechanical line failure occurred in 49% of PICC (6% per line days), 29% of CVC (3% per line days) and 14% of Broviac lines (<1% per line days), with increased mechanical failure rate associated with increased CVC use despite no significant increase in median line duration over time. Deep venous thrombosis occurred in 5% of Broviac lines and 3% of CVC lines. Complicated gastroschisis associated with atresia or bowel necrosis occurred in 11/56 (20%) and doubled the mean number of central lines inserted per patient, with mean duration of 53 versus 28 days ($p=0.004$). Fifteen (27%) patients required PN ≤ 2 weeks. Factor associated with PN duration beyond one month (18 patients; 32%) included silo bag application after 12 hours from birth (OR 12:1, CI 1.2-114.3, $p=0.03$), abdominal closure >7 days (median 31 versus 18 days, $p=0.04$) and bowel necrosis within first week after birth (median 57 versus 21 days, OR 12:1, 9% CI 1.3 to 110.3, $p=0.03$). Birth weight and gestational age did not predict PN duration.

Conclusion: Better securing of lines and CLABSI-prevention interventions are required to reduce line complications. CVC or PICC may be suitable for up to a quarter of patients with uncomplicated gastroschisis. Early placement of Broviac lines for complicated gastroschisis may reduce number of central lines and CLABSI incidence but increases deep venous thrombosis.

015 Feasibility of Intravenous Nutrition for the Management of Gastroschisis in Africa

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Aim: Routine parenteral nutrition (PN) has improved gastroschisis (GS) outcomes in high-income countries (HICs). Many low- and middle-income countries (LMICs) cannot deliver standard neonatal PN. We examined the feasibility of intravenous nutrition (IVN) delivery for GS.

Methodology: Seven paediatric surgery centres (4 African countries) participated in a multi-centre study (May – December 2019). Protocols for IVN delivery were determined at each centre by a local principal investigator, specialists, the study lead and an expert gastroenterologist. Each centre aimed to deliver 100kcal/kg/day; 10% dextrose (1g=4kcal) or substitute and essential and semi-essential amino acids (AA) as protein source (1g=4kcal) delivered as synthetic AA solution. Lipid (1g=9kcal) was used when available. Enteral feeds were advanced early to reduce the complications of long term PN use. Venous access difficulties were noted.

Results: Six of 7 centres initiated or enhanced IVN delivery. All 6 centres aimed to commence IVN on day 1 of admission. Five centres utilized Astymin or Celemin and 1 added Celipid selectively. The 6th centre utilised Kabiven with Intralipid selectively. Breast feeding was

commenced within 24 hours of abdominal wall closure. Ensuring secure venous access for uninterrupted IVN delivery was challenging in all 6 centres. No major complications directly attributable to IVN were recorded.

Conclusion:

1. IVN for GS with substitution of PN macronutrients for available alternatives was feasible
2. Suitable venous access was difficult to achieve and sustain
3. The wider use of short term IVN may enhance GS care in Africa

016 Long-term Impact of Pediatric Surgical Surveillance in Uganda

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Aim: In Uganda we manage a high burden of pediatric general surgical conditions with limited human resources and physical infrastructure. To better assess epidemiology, access, and outcomes, we started pediatric surgical surveillance through a database in 2012. Here we report the impact ten years later.

Methods: As there was no existing database template in 2012, we designed an 11 variable database for our ward, including 100 common diagnosis codes and 50 procedures. Primary outcome was condition at discharge. In 2015, after a national stakeholders meeting we expanded the database to 3 additional sites. This work was initiated with no funding. We analyzed basic metrics for our access and outcomes and used population-based data to assess unmet need and economic impact.

Results: From 2012-2016 we captured 75% of patients and 90% of diagnoses and procedures. 60% of our patients had surgery. 60% of our patients were < 1-year-old and third had congenital conditions. Overall mortality rate was 14% and an effective coverage was 3% for neonatal conditions. The data protocol was expanded to three additional sites and showed that approximately 1% of need is met but that 28,000 DALYs are averted each year across the four sites. The database also led to over ten masters' theses by surgical residents as well as the initiation of several faculty PhD projects. Recent work has suggested that a 3 variable model sampled at 10% would detect a 20% reduction in mortality. Data-driven advocacy supported the installation of operating rooms from KIDS OR and impact evaluation using our database also catalyzed expansion of the KIDS OR initiative.

Conclusion: Initiation of a basic ward database, even with no funding, strengthened the capacity of our unit to have basic information about access, outcomes, and unmet need given services we provide. We expanded this work to key regional hospitals and further informed the substantial unmet need as well as the significant economic impact of our services. Data driven advocacy has increased infrastructure development with international partners and has also inspired local research and collaboration with our colleagues in pediatrics and public health and our international partners.

Poster presentations:

P1 Neonatal Surgical Skills Course by Local Faculty

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Background: This was the third Hugh Greenwood course to be run in Khartoum. And because of the Covid-19 pandemic restrictions, the course was run entirely by a local faculty.

Methods: There were 20 candidates, all paediatric surgical trainees. The faculty consisted of 13 consultants, with one visiting consultant from Doha. We managed to prepare the bowel for all the procedures the day before the course. On the day, the candidates managed to perform bowel anastomosis, Stamm gastrostomy, duodeno-duodenostomy, OA+TOF repair as well as a pyeloplasty. The candidates were then asked to answer a questionnaire.

Results: The usefulness of the course was rated as very good by 95% and good by 45%. An overwhelming 90% would recommend the course to others. Bowel anastomosis and gastrostomy were rated as very good by 75% respondents. The DA model was rated as very good by 65%. The OA+TOF model was rated as very good by 30% and good by a further 40%. The results for pyeloplasty were similar. The venue was rated as very good by 65% of candidates and the catering was deemed very good by 60% of those assessed.

Conclusion: The HG course can be run by a local faculty successfully and with a high degree of satisfaction.

P2 Prevalence of Gastroschisis and its Neonatal Mortality in the Eastern Cape Province

Sello Machaea, Phumza Nogela, Milind Chitnis

Walter Sisulu University, South Africa

Aim: The purpose of this study was to calculate the prevalence of gastroschisis and report on its neonatal mortality in the Eastern Cape Province of South Africa.

Methodology: A retrospective observational study was done on all neonates with gastroschisis, presenting to a tertiary facility offering paediatric surgical services within the Eastern Cape Province from 1 January 2016 up to 31 December 2018.

Results: A total of 37 neonates were included in the study. The prevalence of gastroschisis ranged from 0.07-0.18% throughout the 3-year study period. The majority (81%) of the neonates were outborn and delivered by mode of caesarean section. Nearly 60% (n=22) were females. Over half [54% (n=20)] of them died within the neonatal period. Interestingly, their mothers tended to be young, with a mean age of 20 years

Conclusion: The majority of the neonates in this study were outborn and female. Although their mortality rate was higher than reported in the 1st world countries, it was much improved from what is reported in the developing countries.

P3 Mucous Fistula Refeeding in Extremely Low-Birth-Weight Infants with Enterostomies After Intestinal Perforation

Tamaki Iwade, Koichi Ohno

Japanese Red Cross Society Osaka Hospital, Japan

Aim: Though enterostomy is often performed for intestinal perforation in extremely low birth weight infants (ELBWI), poor weight gain is sometimes observed postoperatively. Recently, some reports suggested that mucous fistula refeeding (MFR) was improved

poor weight gain. In this study, we examined the usefulness of MFR in ELBWI with enterostomies.

Methodology: A retrospective review of 5 ELBWI cases with enterostomies who performed MFR postoperatively in 5 years (January 2015 to December 2020) was carried out. We reviewed on patient demographics, clinical course including weight gain before and after MFR.

Results: 4 cases were focal intestinal perforation and 1 was meconium related ileus. A gestational age and birth weight were 24w5d-26w0d and 354-922 g. The age of enterostomy was 5-24 days. The age and weight of starting MFR were 54-117 days and 890-1576 g. The length of MFR was 32-67 days. The age and weight of closing enterostomy closure were 122-150 days and 1468-2424 g. Weight gain from enterostomy to starting MFR was 3.8-11 g/day (7.6 ± 2.29 g/day) and from starting MFR to enterostomy closure was 8.9-16.7 g/day (12.6 ± 2.61 g/day), respectively. Significant weight gain was recognized before and after MFR ($p=0.019$).

Conclusion: This study demonstrated that significantly difference was recognized in weight gain before and after MFR. We suggested that MFR might be useful for poor weight gain in ELBWI with enterostomies.

P4 Epispadias Repair: A 10-Year Experience of a Single Surgical Unit

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Aim: Epispadias is a rare condition belong to a spectrum of genitourinary malformations ranging in severity from isolated epispadias to bladder exstrophy (BE) and cloacal exstrophy. His surgical management remains a challenge for paediatric surgeons. Surgical techniques for epispadias repair have been modified over the century in order to improve the results in terms of functional outcomes and cosmetic appearances. The aim of this study was to review the outcomes of a West African paediatric surgery unit over 10 years of managing of epispadias

Methodology: The records of 11 boys underwent epispadias repair from January 2010 to December 2020 were reviewed. The study was conducted in the paediatric surgery unit of The Treichville Teaching Hospital in Abidjan, Côte d'Ivoire. The surgical correction was made by the same surgeon. Clinical, therapeutic and evolutionary characteristics were studied as well as cosmetic aspect

Results: Isolated epispadias and bladder exstrophy were respectively, reported in three and eight cases. Mean delay between diagnosis and surgery was 3.28 years (range: 8 months-7 years). Two cases of isolated epispadias were continent and 1 incontinent. Urethroplasty has been made in all of these patients; in BE, after primary bladder closure. The Mitchell's and Cantwell-Ransley's urethroplasty were respectively performed in three and eight patients. Main complications were urethrocutaneous fistula ($n=2$), partial glans necrosis ($n=1$), recurrent ventral curvature due to penile skin bridge ($n=1$), buried penis ($n=1$). The case of partial necrosis was described after the Mitchell's technique. These complications occurred after 1 months to 3 years following the surgery. Cosmetic appearances were generally satisfactory to the parents

Conclusion: Despite the limited series of cases, the results after correction of epispadias are satisfactory. This complication rate can be explained by the small number of cases limiting the surgeon's

experience. The significant delay between diagnosis and intervention could explain the loss of follow-up.

P5 Anorectal Anomalies in The Male: Revisiting The Radiological Classification

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Aim: Classifying anorectal anomalies (ARA) has always been a matter of debate among paediatric surgeons. A new classification does not necessarily imply discarding older ones. Several concepts have been introduced in the past and stood the test of time being still valid up till now

In this report we present our experience in managing a group of boys with ARA by PSARP. We have tried to enhance the current classification to include information about the level of the rectum in relation to sacrum, not just the location of the fistula.

Methodology: The study included 62 consecutive male patients with anorectal anomalies who underwent PSARP between 2009 through 2019. Included cases were either recto-bulbar fistula (21 cases), recto-prostatic fistula (30 cases), or imperforate anus without fistula (11 cases). Their age at operation ranged from 3-36 months (median 6 months, mean 7.8).

The preoperative imaging findings were retrospectively analysed in relation to operative findings

Results: Complementary to sub classifying recto-urethral fistula into recto-bulbar and recto-prostatic, we highlight the importance of identifying the level of distal rectum in relation to sacral vertebrae. This can be used in cases with absent fistula. Also, it can help to differentiate between two subgroups of recto-prostatic fistula with different degrees of severity.

Conclusion: In management of anorectal anomalies, the sacrum can provide two important indicators: a prognostic value for continence, and anatomical landmark to stratify the level of distal rectum in the pelvis which is crucial for planning the best surgical approach.

P6 Balloon Anal Dilatation: An Alternative Technique for Children with Anorectal Malformation

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Background: Regular anal dilatations are commonly practiced following posterior sagittal anorectoplasty (PSARP) in the management of anorectal malformation (ARM). This is necessary to maintain anal patency till stoma closure is achieved. Here, we present an index case of a failed PSARP due to difficult anal dilatation and to describe an alternative technique for anal dilatation.

Case Presentation: A 4-year-old male child required re-do PSARP following a failed repair due to a false anorectal passage as a result of faulty anal dilatation.

Methods: Following a redo PSARP, patient started on regular balloon anal dilatation (BADi). The technique was convenient to parents, acceptable to the child and provided a satisfactory result.

Conclusion: Balloon anal dilatation (BADi) following anorectoplasty for ARM can be a safe and effective alternative to conventional anal dilatation.

P7 Amyand's Hernia in A 3 Years Old Child: A Case Report and Literature Review

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Background: Amyand's hernia is a rare type of inguinal hernia where the appendix is located within the hernia sac, previous studies postulated that Amyand's hernia occurs in 1% of all inguinal hernias and the presence of appendicitis within the Amyand's hernia accounts for 0.1% of all appendicitis.

Case presentation: A 3 years old boy was referred to our hospital following diagnosis of a congenital right inguinal hernia, no symptoms or signs strangulation or obstruction, preoperative laboratory parameters were within normal limits. Elective right inguinal herniotomy was done where incidentally a healthy appendix was found within the hernia sac with the tip of the appendix adherent to the hernia sac, reduction of the apparently healthy appendix into the abdomen and herniotomy was done, the patient passed through an uneventful post-operative course and discharge home without complications.

Conclusion: Due to the rarity of the Amyand's hernia and its variable presentation, the diagnosis of this hernia is mostly incidental as postulated in the revised available literature, and as in our case. There has always a debate about the management of the appendix within the hernia sac that depends on the status of the appendix at the time of surgery, here we followed the recent agreed upon guidelines that no need to do appendicectomy.

P8 Clinical Presentations, Management and Early Outcome of Cystic Hygroma in Sudanese Children (From Jan 2018 – Dec 2020)

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Aim: 1) To identify the socio-demographic characteristics of patients 2) To determine the clinical patterns of cystic hygroma. 3) To describe the modalities of treatment. 4) To study the early outcome/prognosis of management.

Patients and methods: Descriptive, cross-sectional, hospital-based study, was done with retrospective collection of data from patients records in pediatrics surgery centers in Sudan from Jan 2018 – Dec 2020.

Results: 31 cases. male to female ratio of 2.87. With mean age of 31.2 months. Vaginal delivery in 87.1%, and Caesarian section in 12.9% of cases. faciocervical swelling in 87% (27 cases), of those respiratory/feeding difficulties in 9.7% (3 cases), painful swelling i.e. infected cyst in 3.2% (1 case). The most common anatomical site of cystic hygroma in the study was cervico-facial accounting for (87.1%) (27 cases). (9.7%) (3 cases) with axillary swelling, (3.2%) one case presented with anterior chest wall swelling. no associated congenital anomaly. positive family history of cystic hygroma in only one case. 74.2% (23) cases were diagnosed via clinical history and examination, with only 19.4% (8) cases were offered a diagnostic U/S scan. No result came as malignant. 83.9% (26) cases were diagnosed postnatally and only 16.1% (5) diagnosed antenatally. (29) cases were treated with surgical excision, (2) cases treated with Bleomycin injection that was followed by surgical excision. Outcome was full remission in 93.5% of cases, with 3.2% (1) case experienced facial nerve injury, and 3.2% (1) case developed post-operative pneumonia. Cross tabulation and fisher's exact test showed no statistically significant association between gender and age.

Conclusion: CH is common in Sudan, following the international figures in form of the demographic. Limited treatment modalities. The antenatal diagnosis of CH is still deficient in Sudan.